



Title	The effect of human mixed saliva on the cell surface hydrophobicity of Candida species
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Short-term Clinical Effects of Minocycline Strips in Treatment of Adult Periodontitis.
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A double-blind randomised parallel clinical trial is being conducted to evaluate the short-term clinical effects of local application of Minocycline strips in residual pockets of patients with adult periodontitis, who had received initial non-surgical periodontal therapy. The participants are 32 non-smoking patients, aged 35 to 63 yrs (mean 46.5±7.5 yrs), who had at least 4 sites with remaining probing depth ≥ 5 mm one month following completion of a course of scaling and root debridement in combination with proper oral hygiene instructions. The subjects were randomly divided into two subgroups, a test (n=16) and a control (n=16) group. Minocycline strips or placebo strips were inserted into all residual pockets for 3 days on two occasions. Clinical measurements consisted of plaque level and bleeding on probing (BOP), probing depth (PD) and probing attachment level (PAL) using the Florida Probe®. Clinical measurements were recorded before and one month after application of the strips. Statistical analysis was performed by *t*-test. No side-effects were noted due to strip application during the study. At baseline, no significant difference in PD was found between the test (5.4±1.0 mm) and control (5.6±1.2 mm) group. The reduction of PD in test group (Δ PD 1.8±1.4 mm) was significantly greater than that in control group (Δ PD 0.8±1.4 mm) ($p<0.001$). The gain in PAL in test group (Δ PAL 0.48±1.20 mm) was significantly greater than that in control group (Δ PAL 0.02±1.26 mm) ($p<0.05$). There was a reduction of site% BOP (73% to 47%) in test group while no change was noted in control group (67% to 63%). These initial results indicate that local application of Minocycline strips in all residual pockets, following scaling and root debridement, may improve the short-term treatment response in adult periodontitis. The study was supported by the Faculty of Dentistry, The University of Hong Kong and Dong Kook Pharm. Co. Ltd.

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The Effect of Human Mixed Saliva on the Cell Surface Hydrophobicity of *Candida* species. W. LEE*, SK CHEW, MK GO, CH LIEW, TC WONG, TO WAN, WH YAU & LP SAMARANAYAKE (Faculty of Dentistry, University of Hong Kong, Hong Kong)

Adhesion to host surfaces is an essential prerequisite for successful infection by the human fungal pathogen *Candida*, and a key event mediating adhesion is the hydrophobic interactions between the fungus and the host tissues. Despite the fact that all oral surfaces are covered by a ubiquitous salivary film there is no data on the effect of the latter on the cell surface hydrophobicity (CSH) of *Candida* species. Hence we investigated the effect of pooled and single, mixed, human saliva on the relative CSH of 3 isolates each of *Candida albicans*, *C. tropicalis*, *C. glabrata*, *C. krusei* and *C. parapsilosis*. Unstimulated, mixed saliva was collected from three healthy young adults and used in the experiments as single and pooled samples throughout the study. The hydrophobicity assay of Sweet, MacFarlane and Samaranyake (*FEMS Microbiol Letts* 1987; 48: 159-163) was used for evaluation of relative differences in the CSH of *Candida* pre-exposed to saliva and unexposed, control organisms. Briefly, the biphasic hydrocarbon assay comprised evaluation of the relative ability of saliva coated and uncoated, *Candida* species to mechanically migrate into a non-aqueous, xylene layer suspended in a buffer, and estimation of the change in the optical density of the aqueous buffer before and after the experiment. The results indicated that pre-exposure to both pooled and single saliva significantly increases the relative CSH of *C. glabrata* and not the other species ($p < 0.05$). Further the CSH of *C. parapsilosis* isolates was also elevated when pre-exposed to a single saliva sample. Significant inter species variations in CSH was also noted between *C. glabrata* and both *C. krusei* and *C. parapsilosis* when pre-exposed to single as well as pooled saliva. These results indicate that human mixed saliva modulates the CSH of *Candida* species to a significant extent, a fact which should be borne in mind when conducting in vitro evaluation of CSH of fungi and possibly bacteria.

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The microbiological profile of asymptomatic root canal failures – preliminary results
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This study is aimed at investigating the microbiological profile of root canal failures in the Hong Kong Chinese population. Eighteen teeth, which had been endodontically treated for more than 4 years and presented with an acceptable coronal restoration but showed radiographic evidence of periapical lesions, were sampled. Bacteriological sampling was carried out according to the procedures described by Miller (1966). After removal of the old root filling material, a sample was taken using sterile paper points and transported in reduced transport fluid (RTF). The sample was used to inoculate on Enriched Trypticase Soy Agar (ETSA) and selective media for incubation both in a carbon dioxide enriched atmosphere and anaerobically at 37°C. The bacterial colonies were counted after 3 days of aerobic and 7 days of anaerobic incubation. Identification of individual isolates was done by matching the characterization of Gram staining, cell morphology, colony characteristics, aerotolerance, motility and the results of biochemical tests using commercial identification kits. Three canals were excluded due to contamination of operation field or sampling points. Three other canals that were found to be filled with a paste root filling material were also excluded. Seven out of the 12 gutta-percha filled canals contained cultivable bacteria. The range of total colony forming unit was 0 to 2.3×10^5 and the median was 3.6×10^4 . The bacterial genera recovered from these failing root canals were *Streptococcus*, *Enterococcus*, *Gemella*, *Staphylococcus*, *Neisseria*, *Enterobacter*, *Serratia*, *Klebsiella*, *Pseudomonas*, *Peptostreptococcus*, *Veillonella* and *Campylobacter*. There was a predominance of facultative anaerobic Gram-positive cocci and Gram-negative rods. The most frequently isolated organisms were *Streptococcus* spp., coagulase negative *Staphylococcus* spp. and *Pseudomonas aeruginosa*. Of particular interest, a pure culture of *Ps. aeruginosa* was found in 2 out of the 7 canals which demonstrated bacterial growth.

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Dental Nurses' Attitude and Knowledge on Immediate Management of Traumatized Teeth T. LOH*, V. SAE-LIM AND B.Y. TAN (Faculty of Dentistry, National University of Singapore and Ministry of Health, Singapore)

In Singapore, the school dental service covers 95% of primary students and 50% of secondary students. School dental nurses form the front-line providers of basic dental care including the immediate management of oro-facial trauma in schools. Injuries beyond the scope of the school dental nurses are referred to dentists for subsequent management. The optimal immediate management of traumatised teeth is known to be important to long-term success. The purpose of this study was to assess the attitude and knowledge on the immediate management of traumatised teeth by school dental nurses. A three-part questionnaire comprising questions on demographic data, attitude and knowledge was distributed to all school dental nurses. The response rate was 91.9%. Majority (94.3%) had 10 or more years of service experience. Knowledge on management of traumatised teeth was obtained from continuing dental education courses (83.9%) and from daily clinical work (40.1%) and others (34.9%). Only 38.5% felt comfortable with their present knowledge on the subject. A high proportion of the respondents (93.8%) indicated a need for more knowledge. About one fifth (19.8%) and two fifths (38.5%) of the respondents knew where to refer such cases during and after office hours respectively. About twenty-five percent would attempt to replant an avulsed tooth depending on the situation. All nurses concurred on the need to replant a permanent tooth and most (84.4%) agreed that this should be done within 30 minutes. More than half (58.3%) was not sure of the optimal storage medium for avulsed teeth. Their attitude towards acquiring knowledge in this aspect was good (93.8%) and 99.5% would take immediate action to settle appointments for trauma cases. This study showed that dental nurses did not have sufficient knowledge to manage traumatised teeth, however, their attitude towards acquiring knowledge was good.

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Dental treatment needs among 14 year-old schoolchildren in Malaysia. H. AWANG*, S. MUSA AND TN MOHD-DOM (University of Malaya, Kuala Lumpur, Malaysia)

The aim of this study was to assess dental health and treatment needs in 14-year old schoolchildren. 765 subjects were examined by two calibrated dentists. A self-administered questionnaire was used to elicit information on perceived dental treatment needs and the impact of oral health on daily activities of the subjects. 334 children (43.7%) were found to be caries-free and 45.8% required fillings. Only initial restorations were indicated for 232 (30.3%) while 171 (22.4%) required larger restorations. 13 subjects (1.8%) required extractions. The proportion of subjects who perceived themselves as requiring dental treatment (50.7%) was less than that assessed professionally (58.0%). Only 17.4% felt they needed fillings but a higher proportion (8.1%) felt they required extractions; however the dentists' assessment showed 45.8% and 1.8% respectively. Caries experience was consistently higher ($p<0.05$) amongst those who had experienced toothache, pain on chewing as well as disturbed sleep due to oral pain. Conclusion: (a) A high percentage of 14 year-olds require dental treatment (b) Discrepancies exist between their normative and perceived dental treatment needs.

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Translation and validation of the Chinese (HK) version of GOHAI
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Geriatric Oral Health Assessment Index (GOHAI) is originally developed by Atchison and Dolan (1990) for assessing reported oral health problems of older adults. It is a 12-item instrument with a higher score indicating better reported oral health. In order to facilitate the translation of GOHAI into colloquial Chinese, 3 focus group discussions were conducted to collect information on how elderly expressed their concerns about oral health issues. Then GOHAI was translated into colloquial Chinese and back translated into English again. The translated Chinese version of GOHAI was pilot tested with elderly patients attending a dental hospital and residents in an elderly home. Problems with the translated version were noted and modifications were made accordingly. For validation, 751 elderly aged 60-80 years were interviewed by a trained interviewer in elderly homes and social centers. The mean GOHAI score was 48.6 (SD = 7.2; range: 12-80). Internal consistency of the translated GOHAI as measured by Cronbach's alpha was 0.82. Corrected item-scale correlation coefficients ranged from 0.27 to 0.62. Significant association was found between the single item self-rated oral health measure and GOHAI score ($r_s = 0.616$, $p<0.001$). Elderly who perceived themselves as having dental treatment needs had lower mean GOHAI score than those who did not ($p<0.001$). Three factors emerged from principal component factor analysis coincided with the three aspects included in GOHAI (physical functioning, psychosocial functioning, and pain and discomfort). This study showed that the reliability and validity of the translated GOHAI were satisfactory and could be used as a valuable instrument for measuring oral health related quality of life.

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Factors associated with Dental Caries experience of Disabled Adults
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The oral health status of the disabled has been documented to be poorer than the population at large. Little has been reported on the oral health perceptions and practices of these individuals. The aim of this paper was to correlate the attitudes and oral health practices with the dental caries experience in a group of disabled adults. 108 subjects aged 19-52 from the vocational centres for the intellectually disabled and visually impaired participated in the study. All subjects underwent an oral health screening and Questionnaire survey. Their guardians filled in the Questionnaire for the intellectually disabled while the visually impaired were interviewed. Dental caries experience was assessed using the DMFT index. There were no significant differences ($p>0.05$) in the mean DMFT of the intellectually disabled (9.82 ± 7.39) and the visually impaired (10.21 ± 6.2). However, the visually impaired had lower "D" and higher "F" components ($p<0.01$). Factors associated with DMFT were analysed using regression analyses. The independent variables considered were: gender, age, visit to dentist, type of disability, dietary sugar intake, toothbrushing frequency, perceived oral health problems and oral health needs. Factors which emerged as significant in explaining the caries experience were: perceived problem score, type of disability and gender for the "D" component; age and intake of sugar for the "F" component; age and type of disability for the "F" component ($p<0.05$). In conclusion, the results indicate a need to improve the dental caries status and oral health practices of the disabled in Singapore through oral health promotion programmes targeted at the disabled, trainers of the vocational centres and the caregivers.

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Development of an Oral Health Expectation Index for Elderly
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Oral health expectation is thought to be an important factor in explaining various oral health behaviour. A psychometric measurement of oral health expectation for elderly was developed and tested by using the expectancy-value model in psychology. Nine oral health problems included in GOHAI (Atchison and Dolan, 1990) were selected for the construction of the Oral Health Expectation Index (OHEI). Respondents were asked to estimate subjectively the percentage of elderly they know who were free of these problems. The OHEI score was calculated by adding up the nine percentages. Hence the higher the OHEI score, the higher is the expectation. 751 elderly aged 60-80 years were interviewed by a trained interviewer in elderly homes and social centers. Internal consistency of the 9-item index, measured by Cronbach's alpha was 0.64. Owing to the poor inter-items and item-scale correlation, four items were discarded. The Cronbach's alpha of the modified 5-item index was 0.74. Corrected item-scale correlation coefficients ranged from 0.38 to 0.57. Constructed validity of OHEI was tested by three hypotheses concerning the associations among oral health expectation, oral health status, single-item self-rating oral health, oral function satisfaction and perceived treatment needs. All the tests performed supported the hypotheses. It was concluded that the validity of OHEI is satisfactory. OHEI can be used in further researches on dental health behaviour.